$U = 15V$; $\tau = 1{,}8\ 10^{-3}s$

$t \to +\infty \quad i = \dfrac{U}{(R_0 + r)} = I_0 \Leftrightarrow R_0 + r = \dfrac{U}{I_0} \Leftrightarrow r = \dfrac{U}{I_0} - R_0 \Leftrightarrow$

$r = \dfrac{15}{72.10^{-3}} = 8{,}33\ \Omega$

$\tau = \dfrac{L}{R} \Leftrightarrow L = \tau \times R = 1{,}8\ 10^{-3} \times 208{,}33 = 0{,}375H$

3) $i(t) = -\dfrac{U}{R} e^{-\frac{R}{L}t} + \dfrac{U}{R}$; A $t = 0 : i = 0$; Pour $t \to +\infty \quad I_0 = \dfrac{U}{R}$

a) A $t = 0 : i = 0$;

Pour $t \to +\infty \quad i = I_0 = \dfrac{2U}{R} = \dfrac{2 \times 15}{208{,}33} = 1{,}44.10^{-1}A = 144mA$

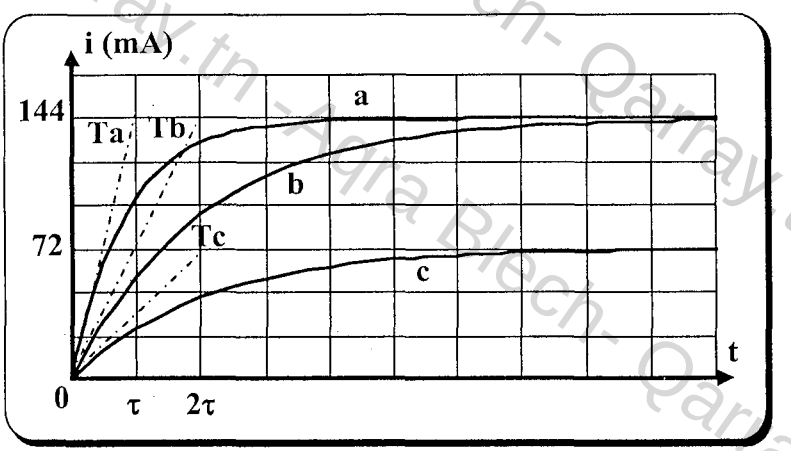
$\tau = \dfrac{L}{R} = 1{,}8.10^{-3}s$

b) $R' = \dfrac{R}{2}$, A $t = 0 : i = 0$; Pour $t \to +\infty \quad i = I_0 = \dfrac{U}{\frac{R}{2}}$

$\Rightarrow i = \dfrac{2 \times 15}{208{,}33} = 1{,}44.10^{-1}A = 144mA \Leftrightarrow \tau' = \dfrac{L}{R'} = 2.\tau = 3{,}6.10^{-3}s$

c) $L' = 2L$ A $t = 0 : i = 0$; Pour $t \to +\infty \quad i = I_0 = \dfrac{U}{R} = 72$ mA

$\tau'' = \dfrac{L'}{R} = \dfrac{2L}{R} = 3{,}6.10^{-3}s.$



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